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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/593,133

11/30/2006

Douglas James Critcher

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EXAMINER

RODRIGUEZ-GARCIA, VALERIE

ART UNIT

PAPER NUMBER

1626

MAIL DATE

DELIVERY MODE

04/27/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/593,133	Applicant(s) CRITCHER ET AL.	
	Examiner VALERIE RODRIGUEZ-GARCIA	Art Unit 1626	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 March 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-11, 16 and 17 is/are pending in the application.
- 4a) Of the above claim(s) 10 and 17 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11 and 16 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>01/24/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Status of the Claims

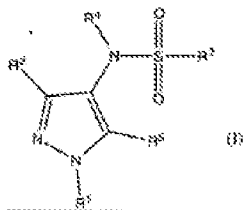
Claims 1-11 and 16-17 are currently pending.

Priority

1. This application is a national stage application of PCT/IB05/00597, filed on March 7, 2005, which claims priority benefit of provisional application 60/571,415 (05/13/2004) and foreign application GB 0406137.0, filed on March, 18, 2004. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

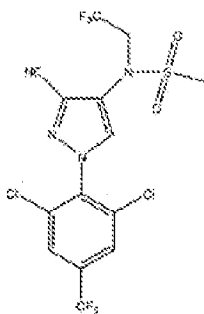
Response to Restriction

Applicant's election of Group I, claims 1-11 and 16, drawn to compounds of



formula (I) , in the reply file on March 24, 2009 is acknowledged.

Because applicant did not distinctly and specifically point out the supposed errors in the restriction between product and process of using, the election of claims drawn to compounds was treated as an election without traverse (MPEP 818.03(a)). Applicants



election of species compound


(example 31 in page 78 of specs, and

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claim 11), **with traverse**, in the reply filed on March 24, 2009 is acknowledged. The traversal is on the ground(s) that other claimed compounds are derivatives of the elected compound and are not mutually exclusive, and that undue searching would not be required because the compound of the claims comprise specific genus of compounds. This is not found persuasive because under PCT rule 13.1 the species should relate to a single general inventive concept. The species of the instant invention do not relate to a single general inventive concept under PCT Rule 13.1 because under PCT Rule 13.2, the species lack the same or corresponding special technical features due that prior art exists which causes the core structure in the instant application to lack a special technical feature. (See Alberti *et al.*) for the reasons discussed in the lack of unity of the Election/Restrictions requirement.

Applicant also argues that in the case of an elected product claim, rejoinder is to be permitted when a product claim is found allowable and the withdrawn process claim depends from or otherwise includes all the limitations of an allowed product claim. The claims in the elected Group I have not been found allowable, therefore, the possibility of rejoinder of Group II cannot be addressed at this time. In accordance with M.P.E.P. 821.04 and *In re Ochiai*, 71 F.3d 1565, 37 USPQ 1127 (Fed. Cir. 1995), rejoinder of product claims and method of use claims commensurate in scope with the allowed product claims will occur following a finding that the product claims are allowable. Until such time, a restriction between product claims and process is deemed proper.

The requirement is still deemed proper and is therefore made final.

Compounds of Formula (I), , depicted in claim 1, wherein: **R¹** and **R⁴** are as defined; **R²** is **cyano or heterocyle**; **R⁵** is **hydrogen** and **R³** is **C1-6 alkyl, C1-6 haloalkyl or (C0-3alkylene)-phenyl**. As a result of the election and the corresponding scope of the invention identified supra, claims 10, 17 and the remaining

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subject matter of claims 1-9, 11 and 16 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to non-elected inventions. The withdrawn compounds contain varying functional groups such as morpholine, triazole, piperazine, etc. which are chemically recognized to differ in structure and function. This recognized chemical diversity of the functional groups can be seen by the various classifications of these functional groups in the U.S. classification system, i.e. class 544 subclass 106(+) (morpholine), class 540 subclass 215(+) (triazoles), 544 subclass 358(+) piperazines, etc. Therefore, the subject matter which are withdrawn from consideration as being non-elected subject differ materially in structure and composition and have been restricted properly. A reference which anticipates the elected subject matter would not render obvious the withdrawn subject matter. In addition, the fields of search are not co-extensive.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a petition under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

The claims embraced by the above expanded search are claims 1-9, 11 and 16.

Pursuant to amendment claims 1-11 and 16-17 are currently pending, claims 10 and 17 are withdrawn and claims 1-9, 11 and 16 are the subject of this office action. This is the First Action on the merits of the claims.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 1-9, 11 and 16 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compounds of formula (I) or a pharmaceutically acceptable salt, does not reasonably provide enablement for a solvate or complexes (as defined in the specification, page 36, lines 14-15) (chlatrates, polymorphs, etc.) of the claimed compounds, solvates and salts. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

To be enabling, the specification must teach those skilled in the art how to make and use the full scope of the claimed invention without undue experimentation. In re Wright, 999 F.2d 1557, 1561 (Fed. Cir. 1993). Explaining what is meant by “undue experimentation,” the Federal Circuit has stated:

The test is not merely quantitative, since a considerable amount of experimentation is permissible, if it is merely routine, or if the specification in question provides a reasonable amount of guidance with respect to the direction in which the experimentation should proceed to enable the determination of how to practice a desired embodiment of the claimed invention. PPG v. Guardian, 75 F.3d 1558, 1564 (Fed. Cir. 1996).

Enablement is considered in view of the Wands factors (MPEP 2164.01 (A)).

These include:

- a) the quantity of experimentation necessary,
- b) the amount of direction or guidance presented,
- c) the presence or absence of working examples,
- d) the nature of the invention,
- e) the state of the prior art,
- f) the relative skill of those in the art,
- g) the predictability or unpredictability of the art, and
- h) the breadth of the claims.

All of the Wands factors have been considered with regard to the instant claims, with the most relevant factors discussed below.

In re Colianni, 195 USPQ 150 (CCPA 1977). *In re Rainer*, et al., 146 USPQ 218 (CCPA 1965). *Ex parte Formal*, 230 USPQ 546 (BPAI 1986).

a) Determining if a particular compound would form a solvate would require synthesis and recrystallization of the compound solvate or hydrate using a variety of solvents, temperatures and humidities. The experimentation for solvates is potentially open-ended.

b) The specification merely mentions the Applicant's intention to make solvates and complexes (clathrates) (page 36), without teaching the preparation thereof.

c) While the claims recite solvates ("complexes" is used in the definition of solvates in page 36), no working examples show their formation. As stated in *Morton International Inc. v. Cardinal Chemical Co.*, 28 USPQ2d 1190, 1194 (Fed.Cir. 1993):

The specification purports to teach, with over fifty examples, the preparation of the claimed compounds ... However ... there is no evidence that such compounds exist ...

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[T]he examples ... do not produce the postulated compounds ... [T]here is ... no evidence that such compounds even exist.

The specification shows no evidence of the formation and actual existence of solvates and complexes (clathrates). Hence, Applicant must show formation of solvates and clathrates or limit the claims accordingly.

d) The nature of the invention is chemical synthesis of solvates and clathrates, which involves chemical reactions.

e) The state of the art recognizes that the formation, composition and therapeutic activity of solvates and clathrates are unpredictable. The Federal Circuit has recognized a solvate as an example of a polymorph or pseudopolymorph (emphasis added):

"Polymorphs" are distinct crystalline structures containing the same molecules. These structural differences can affect various properties of the crystals, such as melting points and hardness (e.g., graphite and diamonds are both crystalline forms of carbon) [P]seudopolymorphs are often loosely called polymorphs ... Pseudopolymorphs not only have their molecules arranged differently but also have a slightly different molecular composition. A common type of pseudopolymorph is a solvate, which is a crystal in which the molecules defining the crystal structure "trap" molecules of a solvent. The crystal molecules and the solvent molecules then bond to form an altered crystalline structure.

SmithKline Beecham Corp. v. Apotex Corp., 74 USPQ2d 1398, 1409 (Fed.Cir. 2005).

The same rationale obtains for hydrates; solvates in which the solvent is water. Souillac, *et al.*, Characterization of Delivery Systems, Differential Scanning Calorimetry, pages 217-218 (in Encyclopedia of Controlled Drug Delivery, 1999, John Wiley & Sons, pages 212-227), recognize that different polymorphs of the same drug can have different therapeutic activity (emphasis added):

Because different polymorphic forms of the same drug exhibit significant differences in their physical characteristics, therapeutic activity from one form to another may be different. Studying the polymorphism of a drug and the relative stability of the different polymorphs is a critical part of pre-formulation development.

Further, Vippagunta et al. (Advanced Drug Delivery Reviews, 48 (2001), pages 3-26) state "Predicting the formation of solvates or hydrates of a compound and the number of molecules of water or solvent incorporated in to the crystal lattice of a compound is complex and difficult." See page 18, section 3.4.

f) The artisan using Applicant's disclosure to prepare the claimed solvates and clathrates would be, e.g., an experienced process chemist with at least a BS chemistry degree.

g) Chemical reactions are known as unpredictable. *In re Marzocchi, et al.*, 169 USPQ 367, 370 (CCPA 1971); *In re Fisher*, 166 USPQ 18, 24 (CCPA 1970). See above regarding the unpredictability of solvate and clathrate formation.

h) The breadth of the claims includes thousands of compounds of the instant formula (I) as well as presently unknown compounds embraced by the terms solvates and complexes (clathrates). See MPEP 2164.01(a), discussed supra, justifying the conclusion of lack of enablement commensurate with the claims. Undue experimentation will be required to practice Applicant's claimed invention.

It is concluded that the amount of experimentation necessary for one of ordinary skill to practice the full scope of what is claimed is undue, especially since not one example of a specific solvate or complex of the compound of the invention has been described, much less actually

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made. The full scope of the solvates and complexes embodiments is enormous and would be practically impossible to achieve.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-9, 11 and 16 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. In Claim 1 it is unclear which are substituents and which are not. At least, claim 1, where it recites "R2 is....C1-6 alkanoyl, optionally substituted by C1-6 alkoxy, C1-6 haloalkanoyl, optionally substituted by C1-6 alkoxy, phenyl, het, -(C0-3 alkylene)-N(Ra)Rb..." does not make it clear if phenyl, het or the others that follow are substituents or not. Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

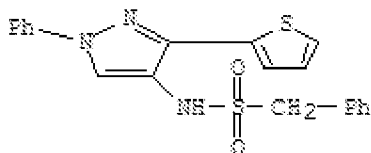
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Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

3. Claims 1, 5, 7, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by WO 2004/043951 A1 (provided by applicants).

The prior art discloses the compound

RN 694435-88-6 HCAPLUS
CN Benzenemethanesulfonamide, N-[1-phenyl-3-(2-thienyl)-1H-pyrazol-4-yl]-
(CA INDEX NAME)



wherein a compound of formula (I) of the claimed invention

R2 is heterocycle, R5 is hydrogen, R4 is hydrogen, R1 is phenyl and R3 is -(C0-3alkylene)-phenyl.

Claim Objections

4. Claims 1-9, 11 and 16 are objected to for containing non-elected subject matter. Claims 1-9, 11 and 16 presented drawn solely to the elected invention identified supra as **the elected invention for search and examination** would overcome this objection.

5. Claims 1-9, 11 and 16 are objected to because of the following informalities:

Independent claim 1 should start with the article, --A--, and dependent should start with --The--. Appropriate correction is required.

Conclusion

No claims are allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VALERIE RODRIGUEZ-GARCIA whose telephone number is (571)270-5865. The examiner can normally be reached on Monday-Friday, 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph K. McKane can be reached on 571-272-0699. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Kamal A Saeed/
Primary Examiner, Art Unit 1626

/VALERIE RODRIGUEZ-GARCIA/
Examiner, Art Unit 1626